



# Interventional Pain Management

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# Introduction

- Multiple Stakeholders
  - GP
  - Physiotherapy
  - Surgery
  - Radiology
  - Oncology
- First described in 1899 Von Gasa (procain)
- Grew out of necessity
- Heretofore empiric
- Evidence base growing only recently

# Regional



- Popularised by Winnie 1950s
- Later adapted by Bonica for Chronic Pain
- Mechanism of action.....

# Trigger Point injection

- Taut band



# Facet intervention

- Injection of corticosteroid into joint.....
- Bogduk's approach
- Median branch block
- ?placebo blind injection
- Metanalysis of radiofrequency neurotomy
- 50-80% 1 year relief

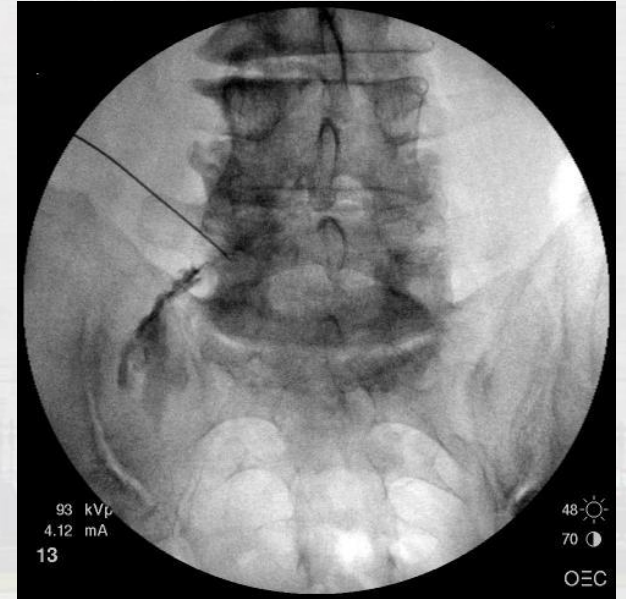
# Surgery



- Decompression
- Discography
- Fusion
- Disc Replacement
- QALY \$70000

# Interventional Pain Management

- Epidural steroid injection
  - Short term benefit
  - Radicular pain
  - Spinal stenosis
  - No evidence of benefit for axial low back pain
- Transforaminal
  - Anterior delivery of steroid
  - Cord infarction
- Intralaminar
- Caudal



# Interventional Pain Management

- Objective – pinpoint source of pain
- If lesion cannot be treated – target nerve supply
- Zygapophyseal Joint
  - Controlled diagnostic block of the medial branches
  - Percutaneous medial branch neurotomy
  - Dreyfuss (2000)
    - 80% relief at 1 year for 60%
    - 60% relief at 1 year in 80%



# Medial Branch Neurotomy

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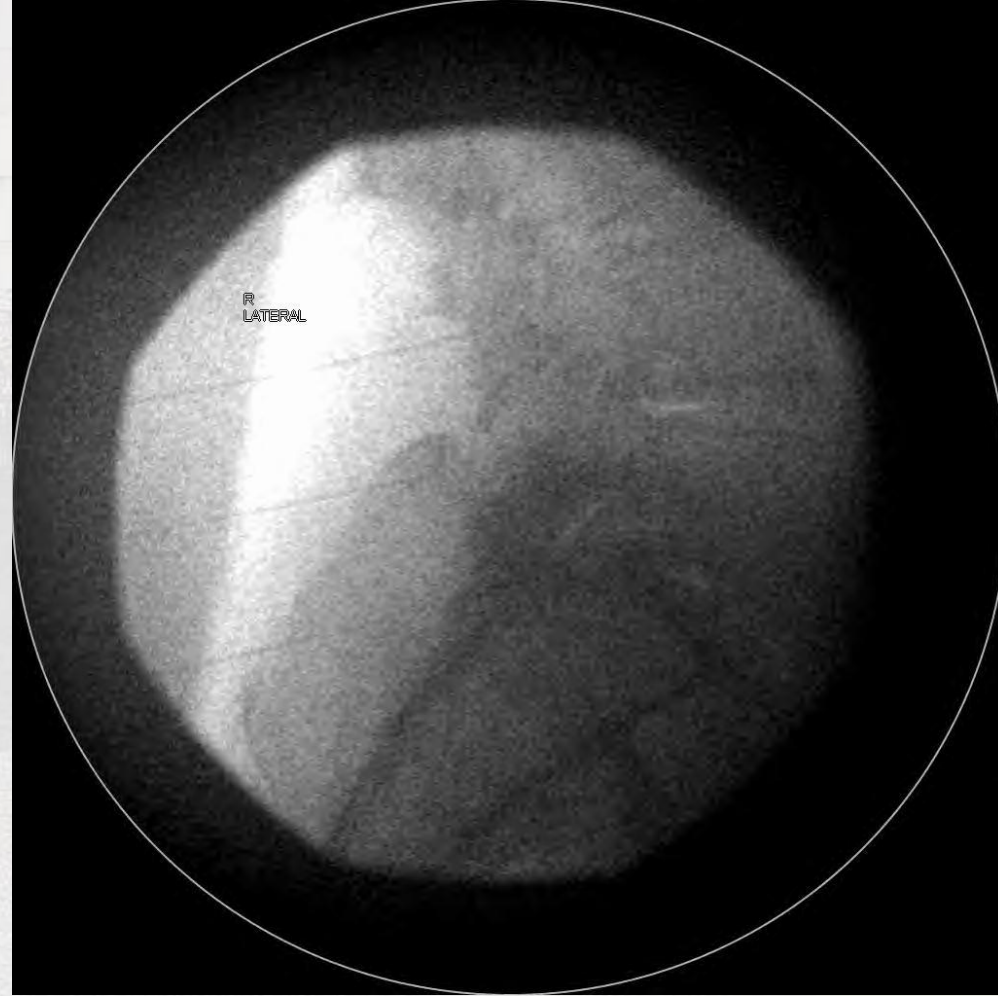
*Bogduk et al.*

**Table 2** A summary of the validity of studies of lumbar medial branch neurotomy, and the outcomes of the valid studies

Study	Level of Evidence	Patient Selection			Outcomes				
		Medial Branch Blocks	Controlled Blocks	Surgical Technique	Better than Sham	Success Rate	Pain Relief	Improved Disability	Reduced Analgesics
van Kleef et al. [63]	II	Yes	No	Partially valid	Yes	47%	Yes	Yes	Yes
Tekin et al. [65]	II	Yes	No	Valid	Yes	65%	Yes	Yes	Yes
Nath et al. [64]	II	Yes	Yes	Valid	Yes		Yes		Yes
Dreyfuss et al. [56]	IV	Yes	Yes	Valid		80%	Yes	Yes	
Gofeld et al. [57]	IV	Yes	Yes	Valid		56%	Yes	Yes	Yes
Burnham et al. [58]	IV	Yes	Partial*	Valid		43%	Yes	Yes	Yes

\* The study of Burnham et al. [58] required a positive response to both a medial branch blocks and an intra-articular block. Levels of Evidence: I: Systematic review of controlled trials, II: randomized controlled trial, III: case-control study, IV: descriptive outcome study.





# Perils of diagnostic blockade

- Variable patient anatomy
- Inaccurate or incomplete nerve block
- Systemic LA effects
- Placebo response
- Patient/doctor communication issues

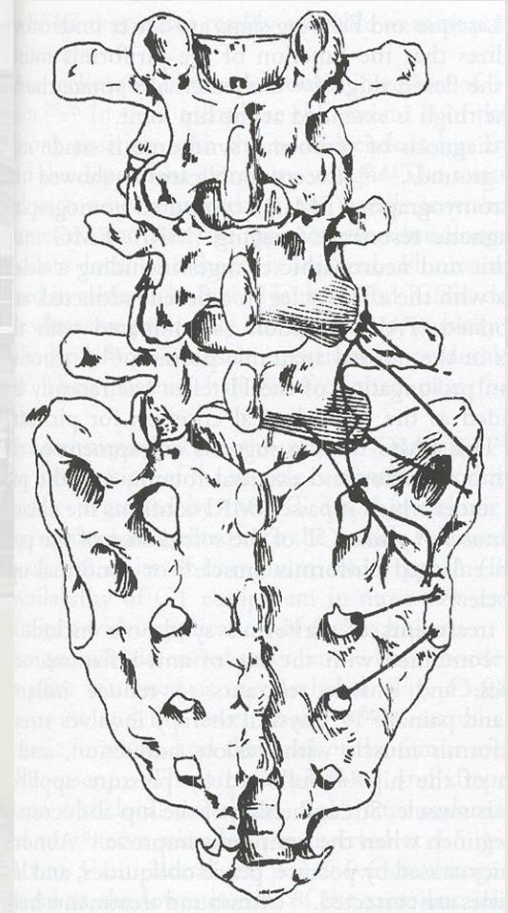
Bogduk's approach: targeted blinded short and long-acting LA and placebo blocks

# Sacroiliac Joint

- Diagnostic block
  - 15 to 20% of chronic low back pain
- Successful treatment difficult
  - Conservative therapies
- RF of lateral branches of the dorsal sacral rami
  - 50% relief at 1 month for 80%
  - 50% relief at 6 months for 60%
  - 50% relief at 12months for 10%

# Sacroiliac joint

- RF Lesioning
- Thermal
- Cold RF



# Epidural adhesiolysis

- Presumed epidural adhesion
- Epidural endoscope
- Complications potentially devastating

# Intradiscal therapies

- Intradiscal electrothermal therapy (IDET)
- Conflicting evidence
- Percutaneous disc decompression
- Percutaneous laser discectomy
- Methylene blue



# Vertebral augmentation

- Vertebroplasty
  - Percutaneous PMMA injection into vertebral body fracture
- Kyphoplasty
  - Similar but balloon tamponade is placed first in vertebral body

# Spinal cord stimulation

- Failed back surgery syndrome
- CRPS
- Well supported by the evidence for long term relief
- Cost effective
- Adverse events in 34%



# High Frequency Stimulation

- 40-60 Hz
- High frequency 10,000Hz
- No paraesthesia
- Initial data suggests more effective n=171
- 50% reduction in pain in 85% Vs 56% for convention – particularly for back component
- Burst alternative



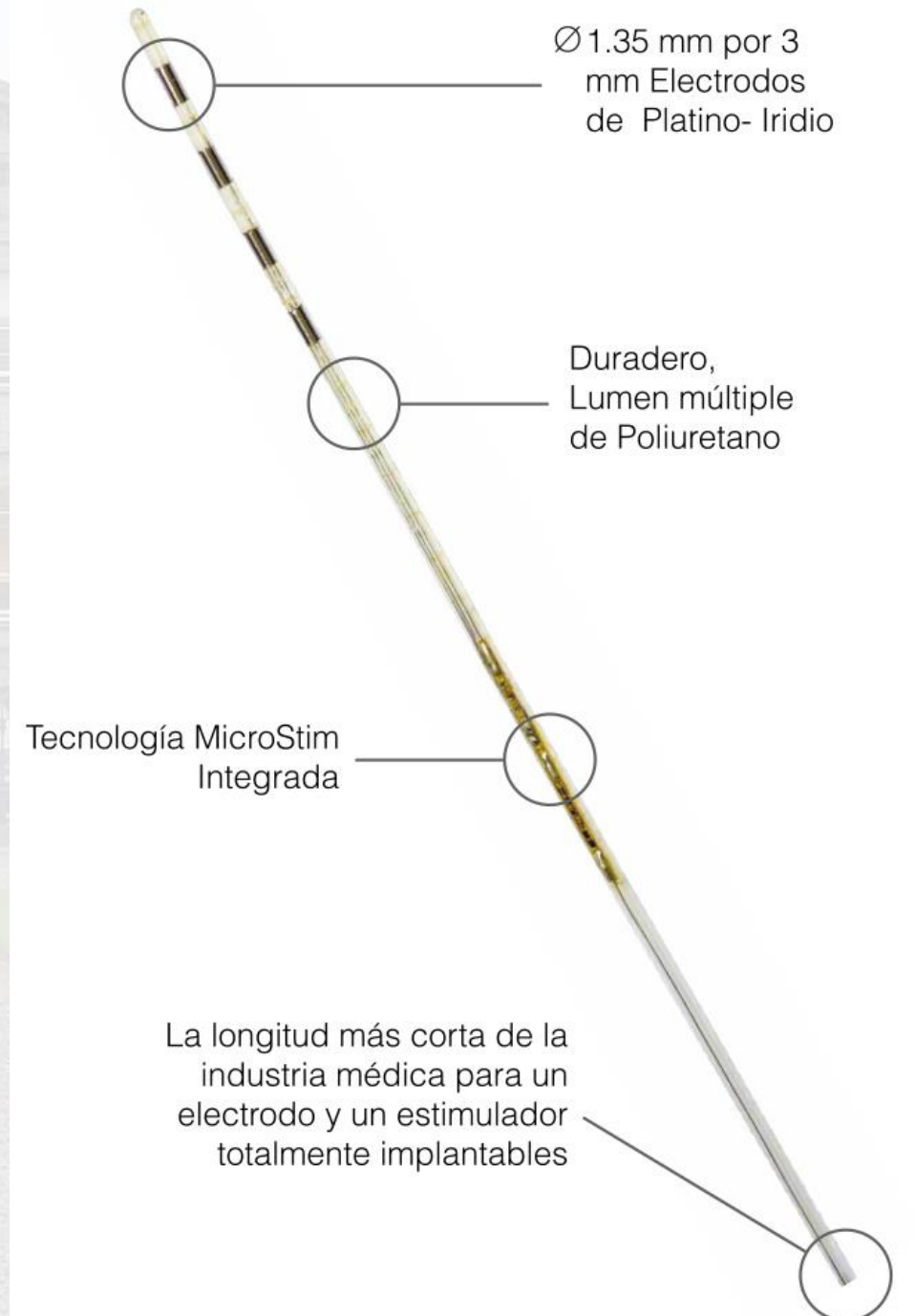
# DRG stimulation

- Targets specific region
- Low energy use/less lead migration
- CRPS
- Neuropathic pain
- PPSP



# Wireless stimulation

- Stimwave
- External power source
- Offers high frequency and convention
- Not yet available



# Deep Brain Stimulation



- Central stimulation
- Used in Parkinsons
- Cancer pain
- Chronic pain

# Implanted intrathecal drug delivery

- Evidence conflicting
- Weak at best
- Appears cost effective
- Indicated as a 'salvage' therapy

# Pain Clinic

- Interdisciplinary
  - Psychology
  - Physiotherapy
  - Occupation therapy
  - Pain Medicine
- Inpatient treatment expensive
- Outpatient brief intervention gaining favour



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*"I think the dosage needs adjusting. I'm not nearly as happy as the people in the ads."*

# Scientific Method, Evidence-based Medicine and Rational Use of Interventional Pain Treatments

Rathnell and Carr, Reg. Anes. & Pain Med, 28, 6, 2003: pp498-501

- Ten year delay to confirm or refute value of an intervention
- Constantly expanding array of options ...that *should* provide pain relief
- Evaluate each patient and provide compassionate and rational therapies

# Staying out of trouble

- Avoid expectations of “quick fix”
- Clarify patient expectations
- Beware the enthusiastic referrer
- Communicate clearly about treatment goals
- Emphasize consultative role

# Areas to interest

- Coamoxiclav for discogenic pain
- Modic 1 changes
- Ibudilast (PDE inhibitor)
- Minocycline